

| <p><u>PROJECT DESCRIPTION</u></p> <p><u>GENERAL</u><br/>STAGE 2 OF THE PROJECT INVOLVES MODIFYING THE EXISTING TRAFFIC CONTROL SIGNAL FOR PHASE 2 OF THE MAINTENANCE OF TRAFFIC AT U.S. 301 AND BILLINGSLEY ROAD IN CHARLES COUNTY. U.S. 301 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.</p> <p><u>INTERSECTION OPERATION</u><br/>DURING PHASE 2 OF THE MAINTENANCE OF TRAFFIC, THE INTERSECTION WILL OPERATE IN A NEMA SIX PHASE FULLY-ACTUATED MODE WITH THE U.S. 301 APPROACHES RUNNING CONCURRENTLY AND THE BILLINGSLEY ROAD APPROACHES OPERATING WITH SPLIT PHASES.</p> <p><u>A LEAD EXCLUSIVE LEFT-TURN PHASE WILL BE PROVIDED FOR SOUTHBOUND U.S. 301 AND LAG LEFT-TURN PHASE FOR NORTHBOUND U.S. 301.</u></p> <p><u>CONTROLLER REQUIREMENTS</u><br/>THE CONTROLLER INSTALLED DURING STAGE 1 WILL BE USED.</p> |   | <p><u>EQUIPMENT LIST "A"</u></p> <p>A. EQUIPMENT TO BE SUPPLIED BY THE SHA</p> <table border="1"> <thead> <tr> <th>QUANTITY</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>2 EACH</td> <td>12 IN. ONE-WAY, FOUR-SECTION (R,Y,G,GA) TRAFFIC SIGNAL HEAD AND TETHER CLAMP WITH ADJUSTABLE BRACKET FOR SPAN MOUNTING AND TUNNEL VISORS.</td> </tr> </tbody> </table> |  | QUANTITY  | DESCRIPTION | 2 EACH    | 12 IN. ONE-WAY, FOUR-SECTION (R,Y,G,GA) TRAFFIC SIGNAL HEAD AND TETHER CLAMP WITH ADJUSTABLE BRACKET FOR SPAN MOUNTING AND TUNNEL VISORS. | <p><u>EQUIPMENT LIST "B"</u></p> <p>B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR</p> <table border="1"> <thead> <tr> <th>QUANTITY</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>LUMP SUM</td> <td>MAINTENANCE OF TRAFFIC</td> </tr> <tr> <td>3 U.D.</td> <td>ARROW PANEL</td> </tr> <tr> <td>LUMP SUM</td> <td>MOBILIZATION</td> </tr> <tr> <td>270 L.F.</td> <td>6 IN., YELLOW PERMANENT PREFORMED PAVEMENT MARKING TAPE</td> </tr> <tr> <td>70 L.F.</td> <td>6 IN., WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE</td> </tr> <tr> <td>15 L.F.</td> <td>24 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE</td> </tr> <tr> <td>55 L.F.</td> <td>FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED</td> </tr> <tr> <td>30 L.F.</td> <td>FURNISH AND INSTALL 2 IN. SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED</td> </tr> <tr> <td>10 L.F.</td> <td>FURNISH AND INSTALL 1 IN. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE</td> </tr> <tr> <td>2 EACH</td> <td>FURNISH AND INSTALL ELECTRICAL HANHOLE</td> </tr> <tr> <td>2 EACH</td> <td>INSTALL 12 IN., ONE-WAY, FOUR SECTION (R,Y,+G,GA) SIGNAL HEAD - SPAN MOUNT</td> </tr> <tr> <td>100 L.F.</td> <td>FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR ALUMINUM SHIELDED (NO. 14 A.W.G.)</td> </tr> <tr> <td>30 L.F.</td> <td>FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)</td> </tr> <tr> <td>440 L.F.</td> <td>FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14. A.W.G.)</td> </tr> <tr> <td>110 L.F.</td> <td>FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)</td> </tr> <tr> <td>1 EACH</td> <td>RELOCATE EXISTING SIGNAL HEAD</td> </tr> <tr> <td>LUMP SUM</td> <td>REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT</td> </tr> </tbody> </table> |  | QUANTITY | DESCRIPTION | LUMP SUM | MAINTENANCE OF TRAFFIC   | 3 U.D. | ARROW PANEL | LUMP SUM                         | MOBILIZATION | 270 L.F. | 6 IN., YELLOW PERMANENT PREFORMED PAVEMENT MARKING TAPE | 70 L.F. | 6 IN., WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE | 15 L.F.                              | 24 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE | 55 L.F.       | FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED | 30 L.F.          | FURNISH AND INSTALL 2 IN. SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED | 10 L.F.               | FURNISH AND INSTALL 1 IN. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE | 2 EACH             | FURNISH AND INSTALL ELECTRICAL HANHOLE | 2 EACH          | INSTALL 12 IN., ONE-WAY, FOUR SECTION (R,Y,+G,GA) SIGNAL HEAD - SPAN MOUNT | 100 L.F. | FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR ALUMINUM SHIELDED (NO. 14 A.W.G.) | 30 L.F. | FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.) | 440 L.F. | FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14. A.W.G.) | 110 L.F. | FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR) | 1 EACH | RELOCATE EXISTING SIGNAL HEAD | LUMP SUM | REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT |
|---|---|--|--|---|-------------|-----------|---|--|--|----------|-------------|----------|--------------------------|--------|-------------|----------------------------------|--------------|----------|---|---------|--|--------------------------------------|--|---------------|---|------------------|--|-----------------------|--|--------------------|--|-----------------|--|----------|--|---------|--|----------|--|----------|---|--------|-------------------------------|----------|---|
| QUANTITY  | DESCRIPTION   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 2 EACH  | 12 IN. ONE-WAY, FOUR-SECTION (R,Y,G,GA) TRAFFIC SIGNAL HEAD AND TETHER CLAMP WITH ADJUSTABLE BRACKET FOR SPAN MOUNTING AND TUNNEL VISORS. |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| QUANTITY  | DESCRIPTION   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| LUMP SUM  | MAINTENANCE OF TRAFFIC  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 3 U.D.  | ARROW PANEL   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| LUMP SUM  | MOBILIZATION  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 270 L.F.  | 6 IN., YELLOW PERMANENT PREFORMED PAVEMENT MARKING TAPE   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 70 L.F.   | 6 IN., WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 15 L.F.   | 24 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 55 L.F.   | FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 30 L.F.   | FURNISH AND INSTALL 2 IN. SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 10 L.F.   | FURNISH AND INSTALL 1 IN. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 2 EACH  | FURNISH AND INSTALL ELECTRICAL HANHOLE  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 2 EACH  | INSTALL 12 IN., ONE-WAY, FOUR SECTION (R,Y,+G,GA) SIGNAL HEAD - SPAN MOUNT  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 100 L.F.  | FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR ALUMINUM SHIELDED (NO. 14 A.W.G.)  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 30 L.F.   | FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 440 L.F.  | FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14. A.W.G.)  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 110 L.F.  | FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| 1 EACH  | RELOCATE EXISTING SIGNAL HEAD   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| LUMP SUM  | REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| <p><u>MAINTENANCE OF TRAFFIC</u></p> <p>THE FOLLOWING WORK ZONE TRAFFIC CONTROL STANDARDS SHALL BE USED FOR THE PROJECT.</p> <p>STANDARD NO. MD-104.00-104.00-12 STANDARD NO. MD-104.45-01 (RIGHT LANE CLOSURE)</p> <p>STANDARD NO. MD-104.31-01 (FLAGGING OPERATION) STANDARD NO. MD-104.46-01 (CENTER LANE CLOSURE)</p> <p>STANDARD NO. MD-104.49-01 (SHOULDER WORK)</p> <p>STANDARD NO. MD-104.44-01 (LEFT LANE CLOSURE)</p>   |   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| <p><u>PROJECT CONTACTS</u></p> <p>THE CONTACT PERSONS FOR DISTRICT #5 ARE AS FOLLOWS:</p> <p>MR. PAUL D. ARMSTRONG<br/>DISTRICT ENGINEER<br/>PHONE: (410) 841-5450</p> <p>MR. JOHN MAYS<br/>ASSISTANT DISTRICT ENGINEER - UTILITY<br/>PHONE: (410) 841-5450</p> <p>MR. LAWRENCE E. ELLIOTT<br/>ASSISTANT DISTRICT ENGINEER - TRAFFIC<br/>PHONE: (410) 841-5450</p> <p>MR. RICHARD L. DAFF, SR.<br/>CHIEF, TRAFFIC OPERATIONS DIVISION<br/>PHONE: (410) 787-7630</p> <p>MR. RAYMOND E. HUTZLER<br/>ASSISTANT DISTRICT ENGINEER - MAINTENANCE<br/>PHONE: (410) 841-5462</p>   |   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| <p><u>WIRING DIAGRAM</u></p>  |   | <p><u>PHASE CHART</u></p>  |  | <p><u>TEMPORARY TRAFFIC STAGE 2</u></p> <table border="1"> <thead> <tr> <th>REVISIONS</th> <th>APPROVALS</th> <th>REVISIONS</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>ASSISTANT DIVISION CHIEF</td> <td></td> </tr> <tr> <td></td> <td>ASST. DISTRICT ENGINEER, TRAFFIC</td> <td></td> </tr> <tr> <td></td> <td>CHEF, TRAFFIC ENGINEERING DESIGN DIVISION</td> <td></td> </tr> <tr> <td></td> <td>DIRECTOR, OFFICE OF TRAFFIC &amp; SAFETY</td> <td></td> </tr> <tr> <td>DATE: 3-31-97</td> <td>DRAWN BY: S. BLOSS</td> <td>F.A.P. NO. _____</td> </tr> <tr> <td>SCALE: NONE</td> <td>DESIGNED BY: N. LEARY</td> <td>S.H.A. NO. _____</td> </tr> <tr> <td>APPROVED BY: _____</td> <td>CHECKED BY: T. HANNAN</td> <td>COUNTY: CHARLES</td> </tr> </tbody> </table> <p>PGM #94-123</p> <p>MARYLAND DOT - STATE HIGHWAY ADMINISTRATION<br/>Office of Traffic &amp; Safety<br/>TRAFFIC ENGINEERING DESIGN DIVISION<br/>GENERAL INFORMATION SHEET<br/>U.S. 301 AND BILLINGSLEY ROAD</p> <p>DATE: 3-31-97 DRAWN BY: S. BLOSS F.A.P. NO. _____<br/>SCALE: NONE DESIGNED BY: N. LEARY S.H.A. NO. _____<br/>APPROVED BY: _____ CHECKED BY: T. HANNAN COUNTY: CHARLES<br/>TS-248IGIX-2 PLAN SHEET NO.: SHEET NO. 4 OF 6</p> |             | REVISIONS | APPROVALS   | REVISIONS  |  |          |             |          | ASSISTANT DIVISION CHIEF |        |             | ASST. DISTRICT ENGINEER, TRAFFIC |              |          | CHEF, TRAFFIC ENGINEERING DESIGN DIVISION               |         |  | DIRECTOR, OFFICE OF TRAFFIC & SAFETY |  | DATE: 3-31-97 | DRAWN BY: S. BLOSS  | F.A.P. NO. _____ | SCALE: NONE  | DESIGNED BY: N. LEARY | S.H.A. NO. _____   | APPROVED BY: _____ | CHECKED BY: T. HANNAN                  | COUNTY: CHARLES |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| REVISIONS   | APPROVALS   | REVISIONS  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
|   |   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
|   | ASSISTANT DIVISION CHIEF  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
|   | ASST. DISTRICT ENGINEER, TRAFFIC  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
|   | CHEF, TRAFFIC ENGINEERING DESIGN DIVISION   |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
|   | DIRECTOR, OFFICE OF TRAFFIC & SAFETY  |  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| DATE: 3-31-97   | DRAWN BY: S. BLOSS  | F.A.P. NO. _____   |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| SCALE: NONE   | DESIGNED BY: N. LEARY   | S.H.A. NO. _____   |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |
| APPROVED BY: _____  | CHECKED BY: T. HANNAN   | COUNTY: CHARLES  |  |   |             |           |   |  |  |          |             |          |                          |        |             |                                  |              |          |   |         |  |                                      |  |               |   |                  |  |                       |  |                    |  |                 |  |          |  |         |  |          |  |          |   |        |                               |          |   |